IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):   David Bryant

Assignee: Dell Products L.P.

Title: System and Method for Extracting a Processor From a Socket

Serial No.:   10/782,161   Filing Date: February 19, 2004

Examiner: Hae M. Hyeon   Group Art Unit: 2839

Docket No.:   DC-05585   Customer No.:   33438

Austin, Texas
August 1, 2005

Mail Stop Appeal Brief - Patents
Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF UNDER 37 CFR § 41.37

Dear Sir:

Applicant submits this Appeal Brief pursuant to the Notice of Appeal filed in this case on June 23, 2005. A check is enclosed which includes the $500.00 fee for this Appeal Brief. The Board is also authorized to deduct any other amounts required for this appeal brief and to credit any amounts overpaid to Deposit Account. No. 502264.

I.   REAL PARTY IN INTEREST - 37 CFR § 41.37(c)(1)(i)

The real party in interest is the assignee, Dell Products L.P., as named in the caption above and as evidenced by the assignment set forth at Reel 015010, Frame 0994.

II.   RELATED APPEALS AND INTERFERENCES - 37 CFR § 41.37(c)(1)(ii)

Based on information and belief, there are no appeals or interferences that could directly affect or be directly affected by or have a bearing on the decision by the Board of Patent Appeals and Interferences in the pending appeal.

III. STATUS OF CLAIMS - 37 CFR § 41.37(c)(1)(iii)

Claims 1 - 4 and 8 - 20 are pending in the application. Claims 1, 4, 8 and 10 stand rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,688,128 issued to Ikeya. Claims 1 - 4 and 8 - 20 stand rejected under 35 U.S.C. § 103 as being obvious over U.S. Patent No 6,758,691 issued to McHugh in view of Ikeya. The rejection of Claims 1 - 4 and 8 - 20 is appealed. Appendix "A" contains the full set of pending claims.

IV. STATUS OF AMENDMENTS - 37 CFR § 41.37(c)(1)(iv)

No amendments after final have been requested or entered.

V. SUMMARY OF CLAIMED SUBJECT MATTER - 37 CFR § 41.37(c)(1)(v)

Land Grid Array (LGA) connectors communicate information through the bottom surface of a processor, such as is used by the INTEL Socket-T (2:16-17) or as is disclosed by McHugh, cited as a reference by the Examiner against the present application. In order to ensure a firm connection of a processor to a socket, a load plate coupled to a socket frame forces the processor into a processor socket (2:24-27). However, removal of a processor from the socket is difficult and can introduce rotation or dragging of the processor that results in damage to socket contacts (2:26-32). To aid removal of the processor from the socket, a processor extraction device extracts the processor from the socket "upon movement of the load plate from a closed to an open position" (Claim 1) or "automatically" extracts the processor from the socket "at movement from the closed position to the open position" (Claim 14). Claim 8 recites the method of "activating an extraction device by movement of the load plate from the closed position to the open position." One embodiment of the extraction device is an adhesive disposed between the load plate and the processor (5:18-31).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL - 37 CFR § 41.37(c)(1)(vi)

Do Ikeya or McHugh taken separately or together teach, disclose or suggest a load plate coupled to a socket frame, the load plate having an open and closed position, and a processor extraction device that extracts the processor from the socket "upon movement of the load plate

from a closed position to an open position" as recited by Claim 1, "activating an extraction device by movement of the load plate from the closed position to the open position" as recited by Claim 8, or "a processor extraction device operable to automatically extract the processor from the socket at movement from the closed position to the open position" as recited by Claim 14?

Does any motivation exist to combine Ikeya and McHugh as applied by the Examiner?

VII.   ARGUMENT - 37 CFR § 41.37(c)(1)(vii)

Ikeya and McHugh cannot anticipate or make obvious Claims 1, 8 or 14 because Ikeya and McHugh taken separately or together fail to teach, disclose or suggest all elements recited by Claims 1, 8 and 14. Further, no motivation exists to combine Ikeya and McHugh as applied by the Examiner.

McHugh discloses a conventional LGA socket similar to the Socket-T disclosed in Applicants' background.

Ikeya discloses a socket having cover 12 locked or released by a latch 24 that compresses an IC chip 60 held to a carrier 62 with adhesive (6:41-44; 6:63-65). To remove the IC chip from the socket, the latch is released and the cover opened to expose the carrier, which "can then be picked up by a tool such as a pair of tweezers" (6:65-66).

Neither Ikeya nor McHugh teach, disclose or suggest extraction of a processor by movement of a load plate. The Examiner maintains the rejections by equating the processor carrier of Ikeya to a load plate and states that removal of the processor carrier with tweezers is operation of the load plate. Applicants respectfully submit that the carrier of Ikeya is not a load plate as recited by Claims 1, 8 and 14 because, for instance, the carrier of Ikeya is not "coupled" to the socket frame in open and closed positions as recited by Claims 1, 8 and 14. Further, the carrier of Ikeya does not itself compress the processor, depending instead on a cover for that purpose (6:16-26 and 41-48). Movement of the cover of Ikeya does not initiate extraction of the processor. The carrier of Ikeya releases free from the socket frame only after the cover is opened if the carrier it is picked up with tweezers. Finally, no motivation exists to combine the adhesive carrier of Ikeya with the load plate of McHugh. The Examiner states the motivation of providing

- 3 -

"an assistance to a processor extracting process from a socket" (Office Action date May 19, 2005) but provides no support for the motivation from either Ikeya or McHugh. Accordingly, Applicant respectfully requests that the Board reverse the Examiner's rejections and allow Claims 1-4 and 8-20.

VIII. CLAIMS APPENDIX - 37 CFR § 41.37(c)(1)(viii)

A copy of the pending claims involved in the appeal is attached as Appendix A.

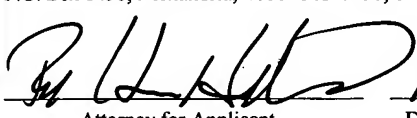## IX. EVIDENCE APPENDIX - 37 CFR § 41.37(c)(1)(ix)

No evidence appendix is filed.

X. RELATED PROCEEDINGS APPENDIX - 37 CFR § 41.37(c)(1)(x)

There are no related proceedings.

XI. CONCLUSION

For the reasons set forth above, Applicants respectfully submit that Claims 1 - 4 and 8 - 20 are fully allowable. Accordingly, Applicants respectfully submit that rejection of pending Claims 1 - 4 and 8 - 20 is unfounded, and request that the rejection of Claims 1 - 4 and 8 - 20 be reversed.

Respectfully submitted,

Robert W. Holland
Attorney for Applicant
Reg. No. 40,020

APPENDIX A

1.   An information handing system comprising:

plural components operable to process information;

a motherboard interfacing the plural components to communicate the information;

a socket frame coupled to the motherboard;

a socket disposed within the socket frame and coupled to the motherboard, the socket

      having plural connectors in electrical communication with the motherboard;

a processor coupled to the socket, the processor having plural connectors aligned to

      couple with the socket connectors;

a load plate coupled to the socket frame and having a closed position and an opened

      position over the processor, the load plate closed position compressing the

      processor connectors into the socket connectors; and

a processor extraction device disposed proximate the load plate and operable to extract

      the processor from the socket upon movement of the load plate from a closed to

      an open position.

2.   The information handling system of Claim 1 wherein the processor comprises a central processing unit.

3.   The information handling system of Claim 2 wherein the central processor unit connectors and socket connectors comprise land grid array connectors.

4.   The information handling system of Claim 1 wherein the processor extraction device comprises an adhesive disposed between the load plate and the processor, the adhesive coupling the load plate to the processor during movement of the load plate from the closed to the open position.

8.   A method for extracting a processor from a socket, the method comprising:

moving a load plate from a closed position that compresses the processor into the socket

      to an open position;

activating an extraction device by movement of the load plate from the closed position to the open position; and

extracting the processor from the socket with the activated extraction device.

9. The method of Claim 8 wherein extracting the processor from the socket further comprises:

coupling the processor to the load plate with an adhesive; and

lifting the processor from the socket by movement of the load plate away from the socket.

10. The method of Claim 8 wherein extracting the processor from the socket further comprises:

decompressing a spring disposed under the processor by moving the load plate from the closed to the open position; and

pushing the processor from socket by decompression of the spring.

11. The method of Claim 10 wherein moving the load plate decompresses plural springs disposed around a heat spreader of the processor to apply a substantially even pushing force for extracting the processor from the socket.

12. The method of Claim 8 wherein extracting the processor from the socket further comprises:

initiating extraction of the processor from the socket with springs aligned to push the processor with the load plate during movement of the load plate from the closed to the open position; and

adhering the processor to the load plate to lift the processor from the socket by translation of lifting motion applied to the load plate.

13. The method of Claim 8 wherein the processor and socket couple by land grid array connectors.

14. A system for extracting a processor from a processor socket, the system comprising:

a socket frame operable to couple to a circuit board proximate a processor socket;

a load plate coupled to the socket frame and operable to move between a closed position that compresses the processor and an open position that exposes the processor; and

a processor extraction device operable to automatically extract the processor from the socket at movement from the closed position to the open position.

15. The system of Claim 14 wherein the processor extraction device comprises a spring engaged with the processor to compress with the load plate in the closed position and to apply an extraction force to the processor if the load plate transitions to the opened position.

16. The system of Claim 14 wherein the processor extraction device comprises plural springs operable to engage with the processor to compress with the load plate in the closed position and to apply an extraction force to the processor if the load plate transitions to the opened position.

17. The system of Claim 14 wherein the processor extraction device comprises adhesive operable to couple the processor to the load plate.

18. The system of Claim 17 further comprising one or more springs aligned to bias the processor out of the socket.

19. The system of Claim 14 further comprising:

a land grid array socket disposed in the socket frame; and

a land grid array processor coupled to the socket.

20.   The system of Claim 19 wherein the processor comprises a central processor unit.